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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/662,408	09/16/2003	Takahiro Matsumoto	03560.003354.	1686
5514	7590	04/29/2005	EXAMINER	
FITZPATRICK CELLA HARPER & SCINTO			LAU, TUNG S	
30 ROCKEFELLER PLAZA			ART UNIT	
NEW YORK, NY 10112			PAPER NUMBER	
			2863	

DATE MAILED: 04/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/662,408

Applicant(s)

MATSUMOTO ET AL.

Examiner

Tung S. Lau

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 April 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 18-30 is/are pending in the application.
- 4a) Of the above claim(s) 19, 24, 26 and 29 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 18, 20, 21, 23, 25, 27, 28 and 30 is/are rejected.
- 7) ☒ Claim(s) 22 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date See office action.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 4-12-2005 has been entered.

Election/Restrictions

Combination/subcombination

2. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 18-23, 20, 25, 28, 27 and 30 drawn to optical position detection using mark position, classified in class 702, subclass 150.
 - II. Claims 19, 24, 26 and 29, drawn to position detection by minimize a difference of weighted conversion parameter, classified in class 702, subclass 155.

The inventions are distinct, each from the other because of the following reasons:

Invention I and II are related as combination (invention I) and subcombination (invention II). Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particular of the subcombinations as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does

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not require the particulars of the subcombination as claimed because Invention II, the combination as claimed does not required position detection by minimize a difference of weighted conversion parameter. The subcombination (invention II) has separate utility such as position detection by minimize a difference of weighted conversion parameter.

Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group II, restriction for examination purposes as indicated is proper.

During a telephone conversation with Scott D. Malpede 4/21/05 a provisional election was made with traverse to prosecute the invention of group I, Claims 18-23, 20, 25, 28, 27 and 30 (reason being the applicant want to reserve the option of arguments regarding election/restrictions later). Affirmation of this election must be made by applicant in replying to this Office action. Claims 19, 24, 26 and 29 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Information Disclosure Statement

3. Information Disclosure Statement filed on 4-12-2005 is acknowledged by the examiner; A copy of a signed PTO-1449 attached with this office action.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 18, 21, 23, 20, 25, 28, 27 and 30 are rejected under 35 U.S.C. 102(a) as being anticipated by Sentoku et al. (U.S. Patent Application Publication 2001/0046315).

Regarding claim 18:

Sentoku discloses a position detection method of detecting a position of a mark, said method comprising steps of: detecting light from the mark under a first detecting condition to obtain a position of the mark as a first position (abstract); detecting light from the mark under a second detecting condition different from the first detecting condition to obtain a position of the mark as a second position (page 7, claims 11-12), obtaining previously prepared data for relating a difference between the first and second positions to offset data for offsetting one of the first and second positions (page 7, claims 11-12); and detecting the

position of the mark based on the first and second positions and the previously prepared data (page 2, section 0014).

Regarding claim 20:

Sentoku discloses a position detection method of detecting a position of a mark, said method comprising steps of: detecting light from the mark under a first detecting condition to obtain a position of the mark as a first position (abstract), detecting light from the mark under a second detecting condition to obtain a position of the mark as a second position (page 1, section 0010-0011), and detecting the position of the mark by weighting the first and second positions with a coefficient and adding the weighted first and second positions (page 2, section 0014-0015); wherein the first and second detecting conditions are different from each other in one of focus state of an image of the mark (page 7, claims 11-12), a coherence factor of an illumination optical system for illuminating the mark (page 2, section 0014-0015), numerical aperture of an imaging optical system for imaging the mark, and polarization state of light for illuminating the mark (page 2, section 0014-0015, fig. 3, unit 12, 26, 23).

Regarding claim 25:

Sentoku discloses an exposure apparatus for transferring a pattern to a workpiece, said apparatus comprising: means for detecting light from a mark on the workpiece under a first detecting condition to obtain a position of the mark as a first position (abstract), means for detecting light from the mark under a second detecting condition different from the first detecting condition to obtain a position

of the mark as a second position (page 2, section 0014-0015), means for obtaining previously prepared data for relating a difference between the first and second positions to offset data for offsetting one of the first and second positions (page 5, section 0054), means for detecting the position of the mark based on the first and second positions and the previously prepared data (page 2, section 0014); and means for aligning the workpiece based on the position of the mark detected by said position detecting means (page 0014-0015).

Regarding claim 27:

Sentoku discloses an exposure apparatus for transferring a pattern to a workpiece, said apparatus comprising: means for detecting light from the mark under a first detecting condition to obtain a position of the mark as a first position (abstract); means for detecting light from the mark under a second detecting condition to obtain a position of the mark as a second position (page 2, section 0014); means for detecting the position of the mark by weighting the first and second positions with a coefficient and adding the weighted first and second positions (page 2, section 0014-0015); and means for aligning the workpiece based on the position of the mark detected by said position detecting means (page 1, section 0009-0011), wherein the first and second detecting conditions are different from each other in one of focus state of an image of the mark (fig. 5, unit 12, 13, abstract)), a coherence factor of an illumination optical system for illuminating the mark (fig. 5, unit 12, 13), numerical aperture of an imaging optical

system for imaging the mark, and polarization state of light for illuminating the mark (fig. 5, unit 12, 13, page 0014-0015, page 1, section 0007-0008).

Regarding claim 21, Sentoku discloses the previously prepared data is previously prepared from relation between the first and second positions and an error obtained with respect to at least one of the first and second positions (page 5, section 0054); Regarding claim 23, Sentoku discloses the first and second detecting conditions are different from each other in one of focus state of an image of the mark (page 5, section 0048), a coherence factor of an illumination optical system for illuminating the mark (fig. 3, unit 12, 26, 10), numerical aperture of an imaging optical system for imaging the mark (page 1, unit 0007-00010), polarization state of light for illuminating the mark (page 1, section 0004), and wavelength of light for illuminating the mark (page 1, section 0004); Regarding claims 28 and 30, Sentoku discloses developing the workpiece to which the pattern has been transferred; and processing the developed workpiece to manufacture the device (abstract, page 1, section 0010-0011).

Claim Objections

5. Claim 22 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all the limitation of the base claim and any intervening claims.

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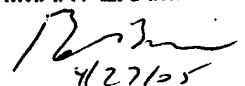
The following is an examiner's statement of reasons for allowance: prior art fail to teach the previously prepared data is a coefficient to be multiplied to the difference, and one of the first and second position is offset by a product of the coefficient and the difference to detect the position of the mark.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tung S Lau whose telephone number is 571-272-2274. The examiner can normally be reached on M-F 9-5:30. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on 571-272-2269. The fax phone numbers for the organization where this application or proceeding is assigned is 703-872-9306. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TL

BRYAN BUI
PRIMARY EXAMINER



4/27/05